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Young men and women without a high school diploma

by Sharanjit Uppal

Overview of the study

In this paper, multiple sources of data are used to study the profile and labour market outcomes of young men and women aged 25 to 34 without a high school diploma. The data sources include the Labour Force Survey (LFS), the Canadian Income Survey (CIS) and the Canadian Survey on Disability (CSD).

- In 2016, 8.5% of men and 5.4% of women aged 25 to 34 had less than a high school diploma, representing about 340,000 young Canadians.
- Lone parenthood was more prevalent among young women with less than a high school diploma (19%) than it was among young women with no more than a high school diploma (10%). Moreover, 11% of young men and women with less than a high school diploma reported that they had a disability, compared with 6% or less for those who had no more than a high school diploma.
- In 2016, the employment rate of young adults aged 25 to 34 with less than a high school diploma was 67% for men and 41% for women. In 1990, 75% of men and 50% of women in the same educational category were employed.
- In 2016, 51% of women with less than a high school diploma were not in the labour force, up from 40% in 1990. The proportion of non-participants also increased among men in the same educational category, from 12% to 22%.
- Construction trade helpers and labourers and transport truck drivers were the two occupations employing the most men with less than a high school diploma. Among women in the same educational category, the top two occupations were light duty cleaners and cashiers.
- On average, more than 60% of the income of young women with less than a high school diploma came from government transfers. This proportion was two times higher than that of young men with a similar level of education.

Introduction

Western countries have the highest levels of educational attainment in the world. Many individuals, however, do not have a high school diploma and consequently do not have any certification from the school system. For example, among Canadians aged 25 and over in 2016, 14% reported that their highest level of education was "less than high school graduation."[1] In the United States, the corresponding proportion was 12% in 2015.[2]

Research focusing on the reasons for dropping out of high school has identified a number of related factors, which can be grouped into several major categories: family-related; peer; school-related; individual; and economic.[3] Family-related factors include low educational and occupational attainment levels of parents, low family income, and single parenthood. Poor academic achievement and poor quality schools are some of the school-related factors. Individual characteristics such as low self-esteem, low aspirations and teenage pregnancy are also related to dropping out of school. Lastly, if students with low cognitive skills expect that their wages might be similar whether they graduate from high school or not, their chances of finishing high school are lower.

Research in the U.S. has shown that not completing high school not only has individual consequences but also economic and social ones.[4] Individual consequences include low levels of academic skills and an absence of educational credentials, which translate into unfavourable labour market outcomes. Economic and social outcomes include forgone national income and tax revenues, increased demand for social services, increased crime, reduced social participation, reduced intergenerational mobility and poorer levels of health.

This article adds to the Canadian literature by examining the characteristics most likely to be associated with having less than a high school diploma. It then examines the extent to which the labour market and income characteristics of those individuals differ from those with higher levels of education among both men and women.[5]

The analysis is limited to individuals aged 25 to 34. This age group was selected based on several factors. First, almost all individuals who finish high school have likely done so by the age of 25. Second, a large majority of young adults in this age group have completed their education by this age, making labour market comparisons more relevant. Third, focusing on youth outcomes is more reflective of the future prospects of current high school students, who must decide whether they should drop out or not. Lastly, examining the performance of young adults is important, given that future career prospects are often related to the type of experience acquired by labour market entrants.[6]

The analysis is done separately for men and women, and comparisons are drawn with other educational attainment categories (high school diploma[7]; trade certificate / college diploma; and university degree). The following questions are addressed:

- How has the proportion of men and women, whose highest level of education is less than a high school diploma, changed over time?
- What are their sociodemographic characteristics?
- How do their labour market outcomes – for example, employment rate, unemployment rate, type of occupation and income – compare to those with higher levels of education and how have these outcomes changed over time?

Data from various sources are used, including the Labour Force Survey (1990 to 2016), the Canadian Income Survey (2013 to 2015), and the Canadian Survey on Disability (2012) (see "Data sources, methods and definitions").

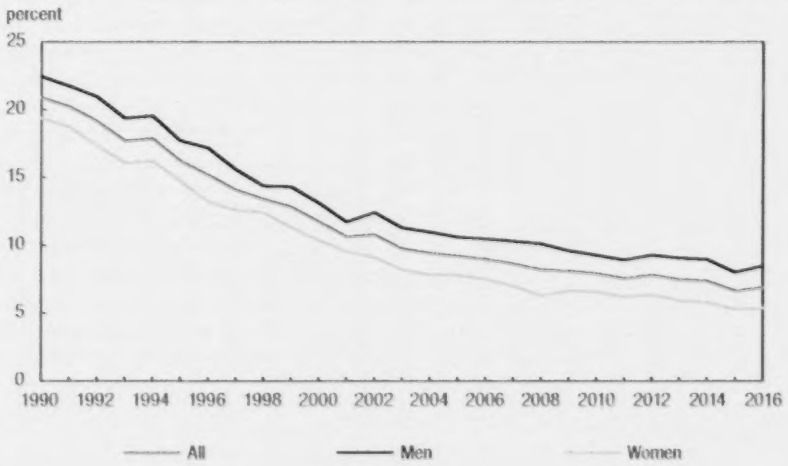
In 2016, 340,000 young Canadians aged 25 to 34 were without a high school diploma

In 2016, 8.5% of men and 5.4% of women aged 25 to 34 had less than a high school diploma. In all, 340,000 young Canadians in this age group – 206,900 men and 133,100 women – did not have a high school diploma.

These numbers, however, represent a change from two and a half decades ago, when the proportions were significantly higher. In 1990, 22% of men and 19% of women aged 25 to 34 had not finished high school (Chart 1). This translated into 1 million individuals aged 25 to 34 (553,700 men and 478,200 women).

The proportion of those with less than a high school diploma mostly declined during the 1990s, as it declined by 9 percentage points for both men and women during that

Chart 1
Proportion of population aged 25 to 34 who did not complete high school, 1990 to 2016



Source: Statistics Canada, Labour Force Survey, 1990 to 2016.

decade.[8] This was followed by a 4 percentage point decline for both sexes over the 2000s. Since then, the proportion of those with less than a high school diploma has remained relatively stable.[9]

Aboriginal people were the most likely to have less than a high school diploma

In 2016, the distribution of men aged 25 to 34 across educational categories was the following: 8.5% had less than a high school diploma; 26.1% had a high school diploma or some postsecondary education; 35.9% had a trade certificate or college diploma; and 29.6% had a university degree. The same proportions for women were 5.4%, 18.5%, 34.3%, and 41.8%, respectively (Table 1).

Aboriginal people (First Nations living off reserve, Métis and Inuit) were more likely to have less than a high school diploma.[10] Specifically, 20% of Aboriginal men and 16% of Aboriginal women did not have a high school diploma.[11] Among immigrants, the percentages were 7% for men and 5% for women; among non-Aboriginal men and women who were born in Canada, the percentages were 9% and 5%, respectively.[12]

Among men, Quebec had the highest proportion of individuals without a high school diploma (12%), followed by young men in Manitoba and Saskatchewan (9% each). Prince Edward Island and British Columbia had the lowest proportions (6% each). Fewer differences were seen among women. Furthermore, the percentages were lower for young men and women living in census metropolitan areas and census agglomerations (CMAs/CAs) than they were for those living outside of CMAs or CAs.

Young adults with lower levels of education are more likely to have children

Examining the family status of those with less than a high school education is important in order to better understand, for example, whether young parents with a lower level of education have less of an incentive to integrate into the labour market given the costs of raising children (such as daycare), or if single parents have increased difficulty balancing working responsibilities with family demands.[13]

Table 1
Highest level of education among men and women aged 25 to 34, 2016

	Men				Women			
	Less than high school	High school diploma/some postsecondary	Trade certificate or college diploma	University degree	Less than high school	High school diploma/some postsecondary	Trade certificate or college diploma	University degree
	percent							
All	**8.5**	**26.1**	**35.9**	**29.6**	**5.4**	**18.5**	**34.3**	**41.8**
Canadian born non-Aboriginal	8.5	27.2	38.1	26.2	4.9	18.5	36.8	39.8
Aboriginal people	20.1	34.4	36.4	9.1	15.9	28.7	37.1	18.3
Immigrants	6.5	20.7	27.4	45.4	5.3	17.0	25.9	51.8
CMAs and CAs versus other areas[1]								
CMA/CA	7.7	25.5	34.5	32.4	4.3	18.1	32.9	44.2
Outside CMA/CA	14.2	30.3	46.0	9.6	9.9	22.0	44.7	23.4
Province								
Newfoundland and Labrador	8.2	24.8	45.5	21.5	3.5	21.9	42.1	32.5
Prince Edward Island	6.2	32.1	31.5	30.2	4.1	18.0	34.1	43.8
Nova Scotia	7.3	29.1	35.7	28.0	4.5	18.0	33.7	43.8
New Brunswick	7.4	30.5	41.5	20.7	3.8	22.5	39.0	34.7
Quebec	11.5	18.0	44.0	26.5	6.2	11.9	42.1	39.8
Ontario	7.6	26.2	32.5	33.7	5.1	17.6	32.1	45.3
Manitoba	9.4	34.5	31.4	24.7	6.3	27.1	29.7	36.8
Saskatchewan	8.9	31.2	34.8	25.1	6.7	24.7	30.1	38.5
Alberta	8.2	27.5	36.3	28.0	5.9	22.6	33.1	38.4
British Columbia	6.2	33.2	31.1	29.5	4.5	23.6	30.1	41.8

1. CMA/CA census metropolitan area / census agglomeration are population centres of at least 10,000.
Source: Statistics Canada, Labour Force Survey, 2016.

The proportion of men who were married or living common law was lower among those who did not finish high school (47%) than it was for those with a trade certificate, college diploma or university degree (55% each). Women with less than a high school diploma were also less likely to be married or in a common-law relationship (55%) than those who had a college diploma or a trade certificate (63%) or a university degree (65%) (Table 2).

Lone parenthood was higher among women with lower levels of education. In 2016, nearly 1 in 5 women aged 25 to 34 without a high school diploma was a lone parent, compared with less than 2% of women with a university degree. Among men, however, lone parenthood remained below 2% regardless of education level.

Both men and women with less than a high school diploma were more likely to have children, but this was especially true for women. Among women aged 25 to 34 who did not finish high school, 62% had at least one child—compared with 32% for those with a university degree.

Women who did not have a high school diploma were not only more likely to have children, they were also more likely to have them earlier.[14] For one-third of young mothers who did not have a high school diploma, their youngest child was at least 5 years old. This compared with about one-tenth of young mothers who had a university degree.[15] Men with less than a high school diploma were also more likely to be a parent and more likely to be a parent at an earlier age. However, the differences for men were not as pronounced as they were for women. About 32% of young men without a high school diploma had at least one child, compared with 22% of young men with a university degree.

Young adults with disabilities are less likely to finish high school

Having a disability can affect educational attainment.[16] Also, not finishing high school might have an effect on psychological well-being and health, whether directly or indirectly, through its effects on employment and income. In this section, data from the 2012 Canadian Survey on Disability (CSD) are used to examine the disability status of young Canadians by level of education.

Table 2
Family status and student participation of men and women aged 25 to 34, by level of education, 2016

	Men				Women			
	Less than high school	High school diploma/some postsecondary	Trade certificate or college diploma	University degree	Less than high school	High school diploma/some postsecondary	Trade certificate or college diploma	University degree
	years							
Average age	29.4	29.3	29.5	29.7	29.4	29.5	29.5	29.6
Spouse's average age	28.9	29.2	29.4	30.1	34.1	33.7	32.9	32.7
	percent							
Marital status								
Married/common-law	47.3	43.6	55.1	54.5	54.8	58.6	63.0	64.5
Lone parent with child(ren)	1.5	0.8	1.1	0.2	18.7	9.6	7.6	1.5
Single[1] with no children	51.1	55.5	43.8	45.4	26.6	31.8	29.5	34.0
Age of youngest child								
Under 5 years	23.4	19.9	24.8	20.9	41.3	31.6	33.7	28.5
5 to 9 years	6.6	3.8	4.0	1.2	15.1	13.3	10.6	3.1
10 years or over	1.6	0.8	0.8	0.2	5.1	2.3	1.9	0.6
No children	68.4	75.5	70.4	77.7	38.5	52.8	53.8	67.8
Student	3.2	7.8	6.0	11.3	8.2	11.4	7.5	11.1

1. Includes separated, divorced and widowed persons without children.
Source: Statistics Canada, Labour Force Survey, 2016.

In 2012, men and women without a high school diploma were more likely to have a disability (11%) than men and women with a high school diploma or postsecondary degree (6% or less) (Chart 2). The most prevalent type of disability was also different. Of those who reported a disability, the most prevalent condition among the least-educated was of a mental/psychological nature, while chronic pain was the most commonly reported affliction among those with higher levels of education.

Of note, among those with a disability, 56% of those with less than a high school diploma had more than one disability. This was also the case for 66% of those with a high school diploma, 67% of those with a trade certificate or college diploma, and 50% of those with a university degree.

In the sections that follow, the labour market participation and income levels of young adults with less than a high school diploma are compared with those who achieved higher levels of educational attainment.

The employment rates of young adults without a high school diploma are at their lowest point in more than 20 years

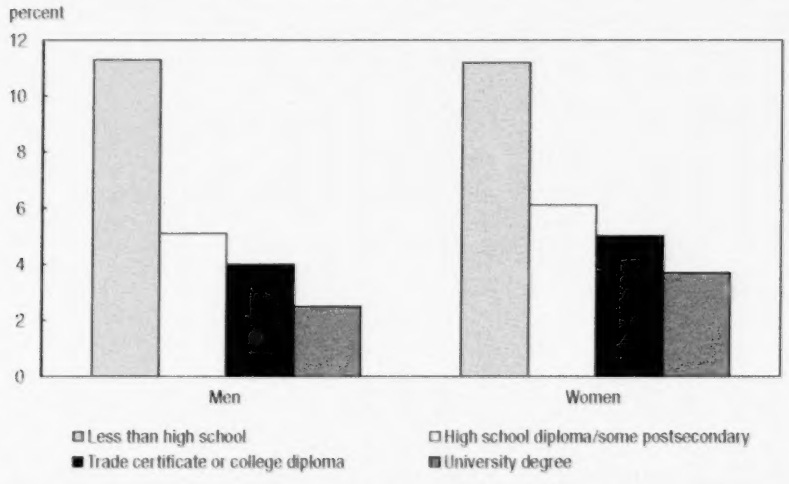
There has always been a difference between the employment rate of those who did not finish high school and that of individuals with higher levels of education. In 1990, the employment rate of men with less than a high school diploma was 75% (Chart 3). This compared with 87% for those who had a high school diploma, 89% for those who had a trade certificate or college diploma, and 91% for those who had a university degree.

The gap between the least-educated and the most-educated increased over the period, mainly because the employment rate of the least-educated declined. In 2016, the employment rate was 67% among young males with less than a high school diploma—the lowest rate since 1994. This compared with a rate of 89% for young males with a university education.[17]

In 2016, the employment rate of women without a high school diploma was 41%—the lowest level seen during the period.[18] This compared with 65% for those with a high school diploma, 82% for those with a trade certificate or college diploma, and 84% for those with a university degree.[19] As was the case for men, the gap in the employment rate between the least-educated and those with a postsecondary education increased between 1990 and 2016.

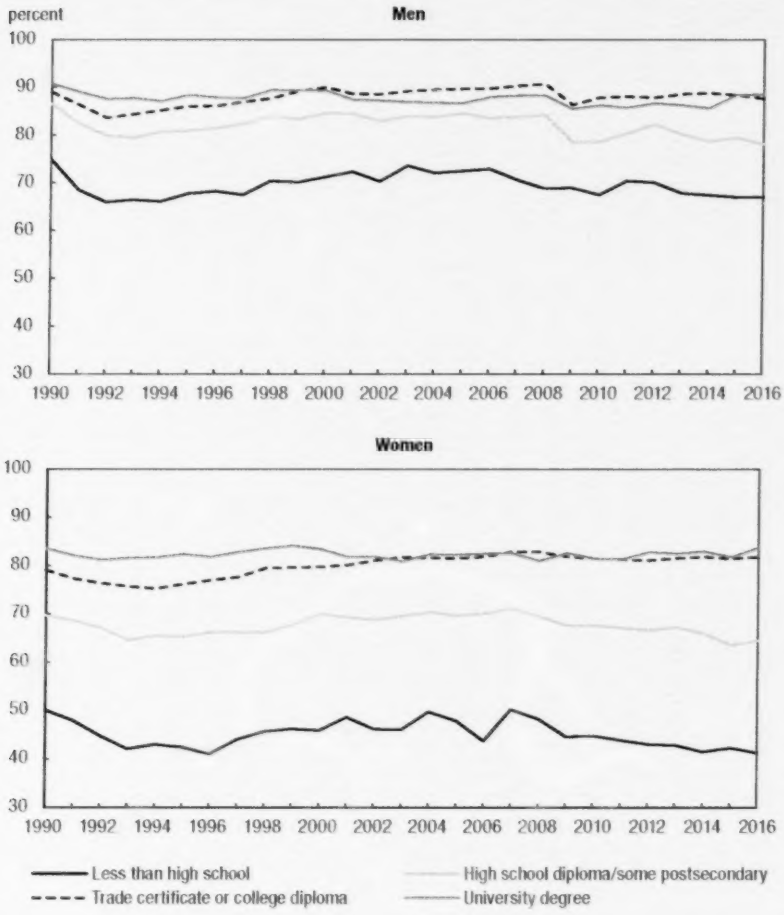
From 1990 to 2016, the employment rates of the least-educated varied more than they varied among those with higher levels of education,[20] partly due to the fact that economic downturns and subsequent recoveries can impact the employment of different educational groups differently.[21]

Chart 2
Proportion of individuals aged 25 to 34 with at least one type of chronic disability, by level of education, 2012



Source: Statistics Canada, Canadian Survey on Disability, 2012.

Chart 3
Employment rates, men and women aged 25 to 34, by level of education, 1990 to 2016



Source: Statistics Canada, Labour Force Survey, 1990 to 2016.

During the 1990/1992 downturn, for instance, the employment rate fell the most for those without a high school diploma (by 9 percentage points for men and 5 percentage points for women). By comparison, employment declined by 3 percentage points for university-educated men and 2 percentage points for university-educated women. The employment rates of the least-educated recovered in subsequent years, but not enough to compensate for the losses of the early 1990s.

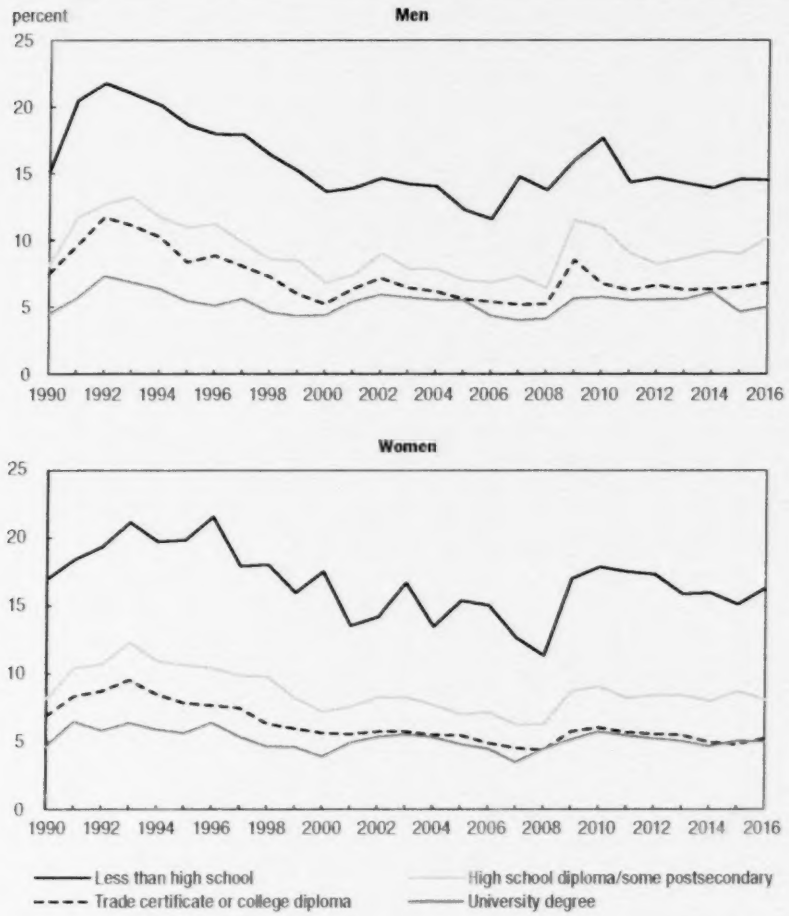
During the most recent downturn (2008/2009) and in subsequent years, the employment rate again declined among women with less than a high school diploma, but remained stable among their male counterparts.[22] Men with a high school diploma bore most of the brunt of the decline in the years following the downturn.[23, 24, 25]

Another important indicator of labour market participation is the work intensity of those who are employed. According to pooled data from the 2013, 2014 and 2015 cycles of the Canadian Income Survey (CIS), the proportion of working men who worked full year, full time did not vary much across educational categories (between 66% and 72%).[26] However, working women with less than a high school diploma (50%) were less likely to work full year, full time than those with a college diploma (65%) or a university degree (63%). This shows that women with lower levels of education are not only less likely to work, but when they do work, they work fewer hours.

Young adults with lower levels of education are more likely not to be in the labour force

Another important labour market indicator is the unemployment rate (Chart 4). The unemployment rate for men and women with lower levels of education has historically been higher than that of individuals with higher levels of education. Among men, for example, the unemployment rate of those without a high school diploma never reached single digits over the years 1990 to 2016, hovering between 12% and 22%. In comparison, the highest

Chart 4
Unemployment rate, men and women aged 25 to 34, by level of education, 1990 to 2016



Source: Statistics Canada, Labour Force Survey, 1990 to 2016.

unemployment rate ever for those with a high school diploma was 13% (in 1993), and never went over 7% for those with a university degree (in 1992). In 2016, the unemployment rate for men with less than a high school diploma was three times higher than that of men with a university degree (15% versus 5%).

Similar trends were seen for women. Among those with less than a high school diploma, unemployment rose during the early 1990s then progressively declined until 2008, and rose again by 6 percentage points during the recent downturn (compared with only marginal increases for women in other educational attainment categories).

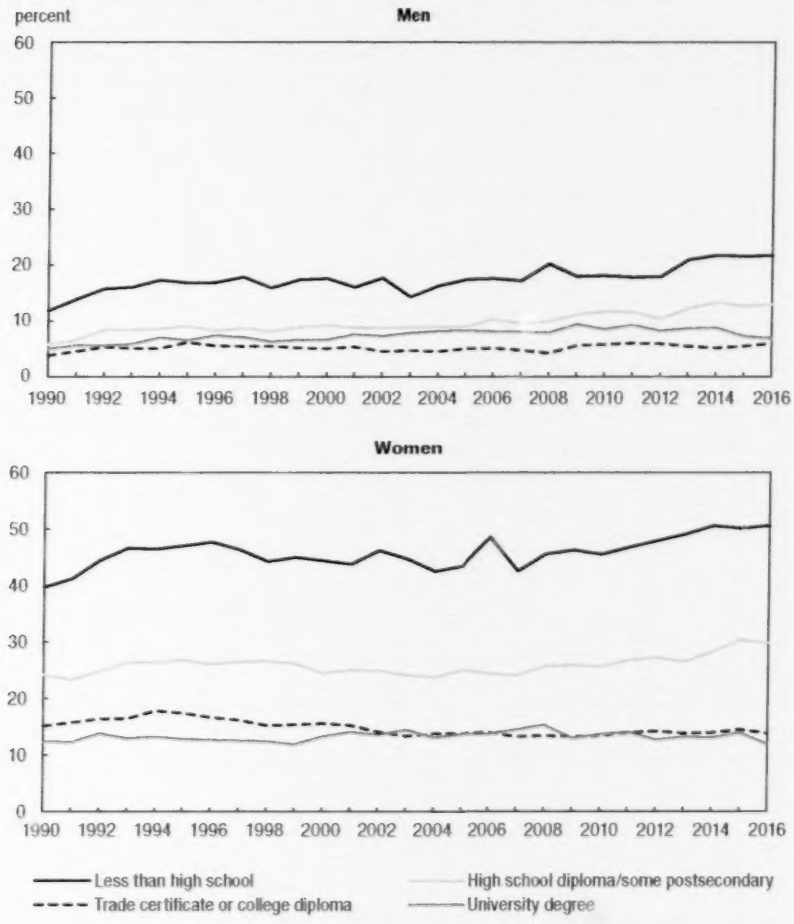
Over the past two and a half decades, however, one of the most fundamental labour market changes that affected young adults with lower levels of education has been the steady increase in the number of those who are not in the labour force—that is to say, neither employed nor unemployed (Chart 5).

In 1990, for example, 12% of men aged 25 to 34 with less than a high school diploma were not in the labour force. That proportion increased during the downturns of the 1990s and again during the downturn of the late 2000s, reaching 22% in 2016—the highest proportion registered during the period.[27]

Women without a high school diploma were particularly more likely to be out of the labour force. In 2016, more than one-half of those who did not have a high school diploma were not in the labour force. That proportion also rose over the period, from 40% in 1990 to 51% in 2016—the highest proportion registered over the past two and a half decades.[28]

The proportion of individuals not in the labour force usually increases during recessions, and the 2008/2009 downturn was no exception. This time, however, the proportion of the least-educated who were not in the labour force continued to increase even after the downturn.

Chart 5
Proportion of men and women aged 25 to 34 not in the labour force, by level of education, 1990 to 2016



Source: Statistics Canada, Labour Force Survey, 1990 to 2016.

One implication of the lack of labour market participation of young adults is that they may not be able to acquire the work experience they need to fully integrate into the labour market. In 2016, nearly one-quarter of young men and one-third of young women without a high school diploma who were not in the labour force had never held a job. This compares with approximately 1 in 5 university graduates and 1 in 10 trades/college graduates who were not in the labour force.

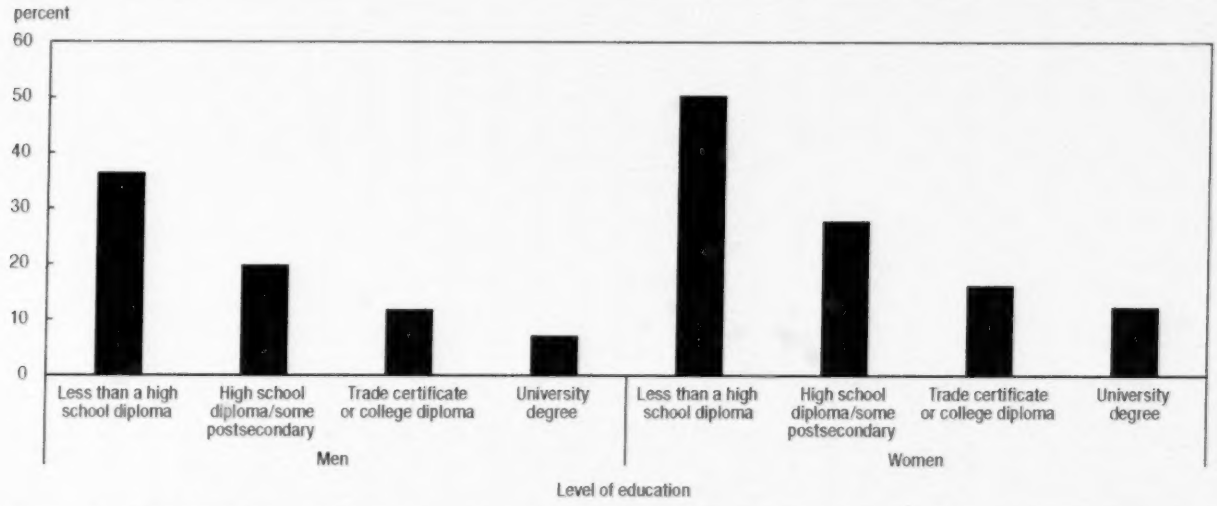
One-half of young women and more than one-third of young men with less than a high school diploma were not in education, employment, or training (NEET)

The unemployed and those who are not in the labour force and not enrolled in school can be regrouped together in order to get a sense of those who are not in employment, education or training—a situation commonly referred to as "NEET" in the literature.[29] Even if the proportion of students is relatively low among those aged 25 to 34,[30] the NEET population can provide a sense of the population that is most at risk of becoming disengaged and socially excluded.

Because they are more likely to be unemployed and not in the labour force, it is not surprising that the proportion of those who were neither employed nor enrolled was higher among young adults without a high school diploma in 2016 (Chart 6).

However, women without a high school diploma are far more likely to be out of the labour force than men and less likely to be employed—the NEET rates of less-educated females were found to be significantly higher than those of their male counterparts. In 2016, more than one-half of young women without a high school diploma were neither employed nor enrolled. This compares with more than one-third of young men with a similar level of education.

Chart 6
Proportion of men and women 25 to 34 with less than a high school diploma that were neither employed nor enrolled ("NEET" rate), 2016



Source: Statistics Canada, Labour Force Survey, 2016.

What are the top occupations of young men and women without a high school diploma?

In 2016, construction trade helpers and labourers and transport truck drivers were the two occupations employing the most male workers with less than a high school diploma (Table 3),[31] with approximately 5% of them employed in each of these two occupations. These two were the most common occupations in both 1990 and 2016, although the order was different. In 1990, transport truck driver was the most common occupation at 7%.

Among the 10 most common occupations, three of them were different in 1990 and 2016, implying a change in occupational profile over time. Although there were some differences in the list of the 10 most common occupations in both years, together they employed a similar proportion in the two years (31% in 1990 and 32% in 2016), which means that occupational concentration at the top 10 level remained unchanged.

Unlike male workers, occupational concentration changed between the two years for female workers. In 1990, the top 10 occupations accounted for 38% of employed women without a high school diploma. In 2016, this proportion increased to 45%. Again, unlike male workers, the two most common occupations among female workers without a high school diploma were different in the two years. In 1990, retail salespersons (6%) and food and beverage servers (5%) were the top two occupations. In 2016, light duty cleaners (9%) and cashiers (8%) were the two most common occupations.

There is a notable similarity in the 10 most common occupations between men and women with a level of education equal to less than a high school diploma and their counterparts with a high school diploma (see Table A1 in the "Supplementary information" section for a list of most common occupations for men and women with a high school diploma). In fact, among female workers in these two educational groups, seven occupations that appeared in the top 10 were the same for both. Among male workers, six were the same. Although there was an overlap in the list of the 10 most common occupations, there was less occupational concentration among those with a high school diploma compared with their less-educated counterparts.

Table 3
The 10 occupations employing the most male and female workers aged 25 to 34 with less than a high school diploma, 1990 and 2016

	1990	2016
	percent	
Men		
Construction trade helpers and labourers	5.3	5.4
Transport truck drivers	6.6	4.7
Material handlers	2.9	4.5
Janitors, caretakers and building superintendents	2.4	2.8
Cooks	...	2.8
Carpenters	2.6	2.7
Automotive service technicians, truck and bus mechanics and mechanical repairers	2.2	2.3
General farm workers	...	2.2
Landscaping and grounds maintenance labourers	...	2.2
Heavy equipment operators (except crane)	2.4	2.1
Managers in agriculture	2.7	...
Delivery and courier service drivers	2.3	...
Other labourers in processing, manufacturing and utilities	2.1	...
Women		
Light duty cleaners	4.4	9.2
Cashiers	4.4	8.4
Food and beverage servers	4.6	4.8
Food counter attendants, kitchen helpers and related support occupations	4.3	4.7
Retail salespersons	5.7	4.1
Retail sales supervisors	...	3.7
Early childhood educators and assistants	2.8	3.1
Nurse aides, orderlies and patient service associates	...	2.9
Cooks	3.0	2.4
Estheticians, electrologists and related occupations	...	2.2
Industrial sewing machine operators	3.0	...
Other labourers in processing, manufacturing and utilities	3.0	...
General office support workers	2.8	...

... not applicable

Note: Data on occupation is for the current job if employed or the last job if worked within the previous 12 months.

Source: Statistics Canada, Labour Force Survey, 1990 and 2016.

Lastly, self-employment rates were slightly higher among those with lower levels of education. Among working men, the proportions of self-employment were 15%, 12%, 11% and 10% from the lowest to the highest level of education. Among working women, 11% of those without a high school diploma were self-employed, while 7% of those with university degree were self-employed.

Government transfers accounted for more than 60% of the income of young women without a high school diploma

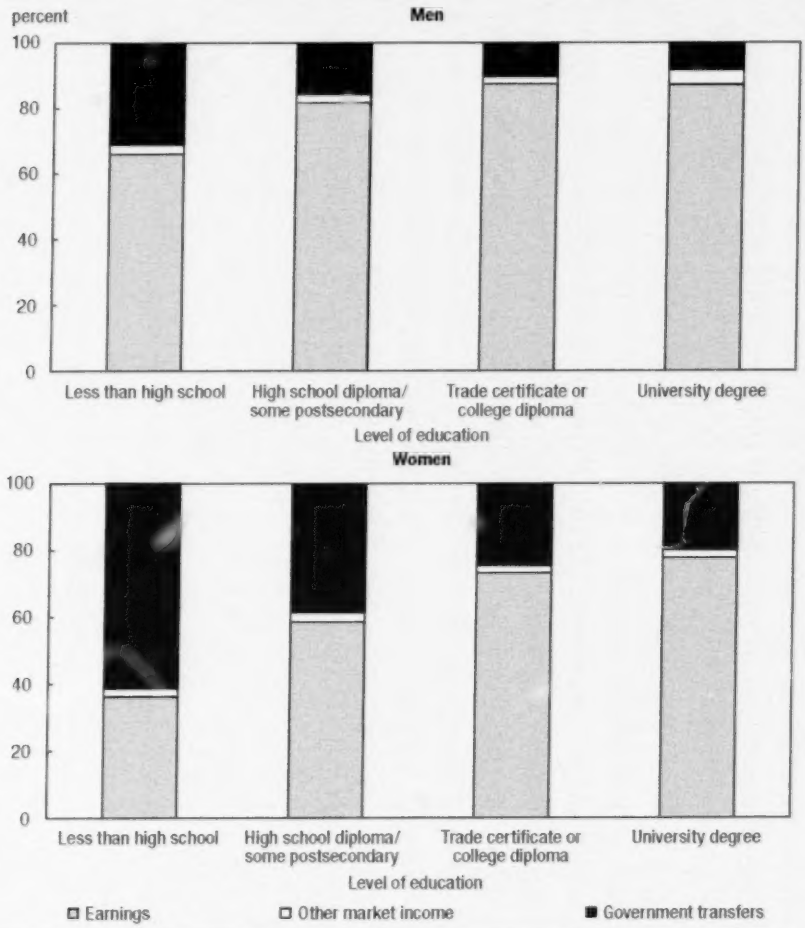
Based on pooled data from the Canadian Income Survey, earnings accounted for 66% of the individual income of men aged 25 to 34 with less than a high school diploma, while government transfers accounted for 31% on average (Chart 7).[32] In comparison, more than 80% of the individual income of men with higher levels of education came from earnings.

Among women, the reliance on government transfers was significantly more pronounced. On average, government transfers accounted for 61% of the individual income of women without a high school diploma. This compared with 39% among high school graduates, and less than 25% among those with a postsecondary degree (trades/college or university).

The earnings gap between individuals with less than a high school diploma and other educational categories was larger among women (Table 4). Among women working full year and full time, the median employment income of high school graduates surpassed that of the non-completers by 43% ($30,100 versus $21,000). Among men, the difference was smaller, at 18% ($42,900 versus $36,300).

The lower gap for men is reflective of the fact that a notable proportion of men with less than a high school diploma are employed in occupations where wages are relatively higher, such as construction workers, truck drivers and heavy equipment operators, to name a few. On the other hand, women with a similar level of education are more likely to be employed in occupations including light duty cleaners and cashiers, which are likely to pay relatively lower wages.[33]

Chart 7
Sources of individual income for men and women aged 25 to 34, by level of education, pooled data from 2012 to 2014



Source: Statistics Canada, Canadian Income Survey, 2013 to 2015.

Not only were earnings and individual income lower for those with less than a high school diploma, so was family income. The before-tax family income of men with a high school diploma (adjusted for household size) was higher than that of non-completers—by 29%. Among females, the difference was even larger, at 44%.

Conclusion

In 2016, 8.5% of young men and 5.4% of young women had not completed high school, representing 340,000 individuals aged 25 to 34. Although the number of people with less than a high school diploma became smaller over time, that group faces labour market integration challenges, including higher rates of single parenthood (for women) and higher disability rates. It is therefore important to examine the extent to which this population participates in the labour market.

Recently, the employment rate gap between young men and women without a high school diploma and those in higher categories of educational attainment increased—a result of the decline in the employment rate of the least-educated over the past two and a half decades. Women who did not finish high school were particularly less likely to work than men who were in the same situation.

Another important development in recent decades has been the increase in the proportion of young men and women without a high school diploma who were out of the labour force. As a result, in 2016, one-half of young women and more than one-third of men without a high school diploma were "not in employment, education, or training" (NEET). This population may be particularly more at risk of being socially excluded, and may find labour market integration even more difficult as they age.

Table 4
Median employment income, median individual income and median family income for men and women aged 25 to 34, by level of education, pooled data from 2012 to 2014 (in constant 2014 dollars)

	Level of education			
	Less than a high school diploma	High school diploma/ some postsecondary	Trade certificate or college diploma	University degree
	2014 dollars			
Men				
Median employment income[1]				
Employed some time in reference year	30,100	34,300	43,600	46,900
Employed all year	36,000	41,000	49,400	55,900
Employed full year, full time in reference year	36,300	42,900	51,100	58,000
Median individual income[2]				
Total individual income before taxes	26,500	34,200	44,300	46,000
Total individual income after taxes	24,600	30,300	38,300	40,300
Median family income[2]				
Total economic family income before taxes	35,100	45,100	51,900	53,800
Total economic family income after taxes	31,700	39,400	44,700	47,000
Women				
Employment income[1]				
Employed some time in reference year	12,900	20,500	28,800	37,800
Employed all year	18,400	26,200	33,600	46,000
Employed full year, full time in reference year	21,000	30,100	35,800	49,700
Median individual income[2]				
Total individual income before taxes	19,000	21,700	31,200	37,400
Total individual income after taxes	18,600	20,700	28,800	34,100
Median family income[2]				
Total economic family income before taxes	25,300	36,500	46,100	55,600
Total economic family income after taxes	24,400	32,500	40,100	48,100

1. Individuals who were employed at some point in 2015.
2. All individuals.

Source: Statistics Canada, Canadian Income Survey, 2013 to 2015.

Among those who did work, men and women with less than a high school diploma were working in different occupations. About 9% of working women in this educational category worked as light duty cleaners, and another 8% worked as cashiers. Among male workers, construction trade helpers and labourers (5%) and transport truck drivers (5%) were the top two occupations among those who did not finish high school.

Lastly, this paper also showed that dependency on government transfers was higher for women than men, which concurs with the lower labour market participation of women who did not finish high school. Government transfers accounted for more than 60% of the income of women with less than a high school diploma. This compared with 31% for men in the same educational category.

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Data sources, methods and definitions

Data sources

The article uses data from three sources: the Labour Force Survey (LFS), the Canadian Income Survey (CIS) and the Canadian Survey on Disability (CSD). The LFS is a mandatory monthly survey that collects labour market information for all household members aged 15 and over, as well as demographic and family relationship information for all household members. Excluded from the survey's coverage are people living on reserves and other Aboriginal settlements in the provinces, full-time members of the Canadian Armed Forces, and the institutionalized population. These groups together represent an exclusion of less than 2% of the Canadian population aged 15 and over.

LFS data on individuals aged 25 to 34 from 1990 to 2016 were used to look at educational attainment, labour force status and other characteristics. Data prior to 1990 could not be used because, prior to 1990, educational attainment was measured as the number of years of schooling completed, whereas, 1990 onwards, it was measured as the highest level of schooling ever completed.

The CIS is a cross-sectional survey developed to assess the economic well-being of individuals and families in Canada. It is an annual supplement to the LFS; the first collection was undertaken in 2013 for the 2012 reference year. For four consecutive months, LFS respondents in their last month of LFS collection were selected for the CIS. The CIS is a **live LFS supplement**, meaning it consists of a brief interview conducted shortly after the LFS interview. This interview information is combined with information from the LFS, as well as information obtained from the respondent's income tax records to produce estimates of income for the individual and family.

CIS data on individuals aged 25 to 34 from the 2013, 2014 and 2015 cycles were used to derive estimates of income and work intensity. Data for the three years were pooled together to increase the sample size.

The CSD is a survey of Canadian adults whose daily activities are limited because of a long-term condition or health-related problem. The CSD is based on a social model of disability rather than a medical model. The social model is based on the premise that disability is the result of the interaction between an individual's functional limitations and barriers in the environment, such as social and physical barriers, that make it harder to function on a daily basis.

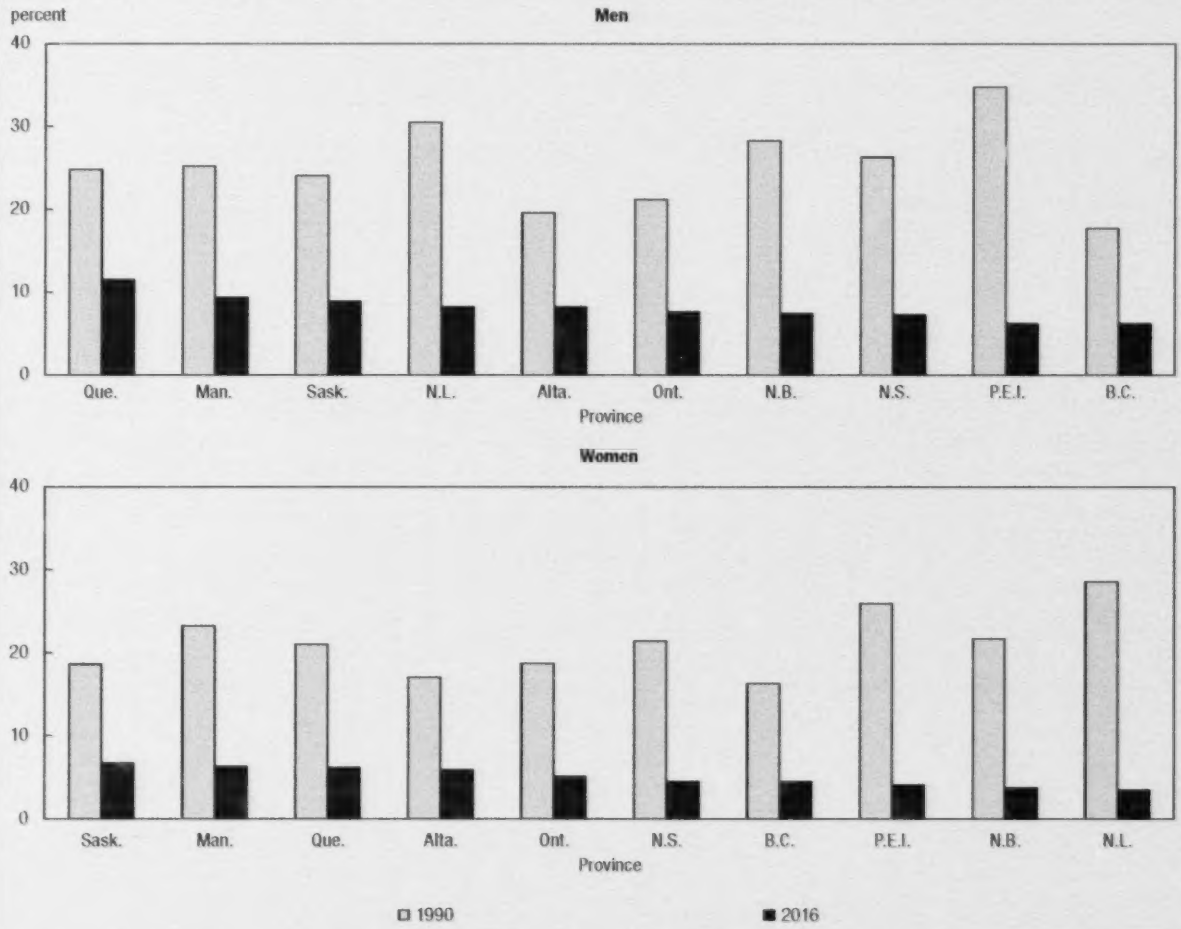
Data on individuals aged 25 to 34 from the 2012 CSD were used to derive estimates of disability prevalence. The 2012 CSD was based on a sample of people who reported an activity limitation on the 2011 National Household Survey.

Provincial differences in the proportion of young adults with less than a high school diploma

In 1990, the highest level of education for 1 in 5 Canadians aged 25 to 34 was less than a high school diploma (Chart 8). Prince Edward Island and Newfoundland and Labrador topped the list with the highest proportions for men at 35% and 31% respectively. At the other end of the spectrum, British Columbia (18%) and Alberta (20%) had the lowest proportions. By 2016, the rankings had changed. British Columbia still had the lowest proportion at 6%, but was joined by Prince Edward Island, also at 6%. Quebec now had the highest proportion (12%) followed by Manitoba and Saskatchewan (9% each).

Newfoundland and Labrador had the highest proportion of women with less than a high school diploma in 1990 (29%), followed by Prince Edward Island (26%). British Columbia (16%) and Alberta (17%) had the lowest proportions. In 2016, Newfoundland and Labrador and New Brunswick had the lowest proportions (4% each) while Saskatchewan had the highest proportion (7%).

Chart 8
Proportion of men and women aged 25 to 34 with less than a high school diploma, by province, 1990 and 2016



Source: Statistics Canada, Labour Force Survey, 1990 and 2016.

Supplementary information

Table A1
The 10 occupations employing the most male and female workers aged 25 to 34 with a high school diploma or some postsecondary education, 1990 and 2016

	1990	2016
	percent	
Men		
Transport truck drivers	3.6	4.0
Material handlers	2.3	3.3
Construction trades helpers and labourers	2.3	3.1
Retail salespersons	3.0	3.0
Carpenters	2.2	2.8
Shippers and receivers	2.2	2.1
Heavy equipment operators (except crane)	...	2.0
Cooks	...	2.0
Sales and account representatives - wholesale trade (non-technical)	...	1.9
Retail sales supervisors	...	1.7
Retail and wholesale trade managers	3.8	...
Managers in agriculture	2.0	...
Delivery and courier service drivers	1.6	...
Automotive service technicians, truck and bus mechanics and mechanical repairers	1.6	...
Women		
Retail salespersons	4.4	5.9
Cashiers	3.7	4.2
Food and beverage servers	2.3	4.1
Food counter attendants, kitchen helpers and related support occupations	...	3.7
Early childhood educators and assistants	2.2	3.5
Light duty cleaners	...	3.2
Retail sales supervisors	...	3.0
General office support workers	6.9	2.6
Administrative officers	...	2.5
Pursers and flight attendants	...	2.2
Administrative assistants	9.2	...
Receptionists	3.3	...
Retail and wholesale trade managers	2.8	...
Customer services representatives - financial institutions	2.8	...
Accounting and related clerks	2.2	...

... not applicable

Note: Data on occupation is for the current job if employed or the last job if worked within the previous 12 months.

Source: Statistics Canada, Labour Force Survey, 1990 and 2016.

Notes

1. Based on data from the 2016 Labour Force Survey.
2. Based on data from the 2015 Current Population Survey, Annual Social and Economic Supplement. This rate varies depending on whether or not individuals with General Educational Development (GED) are considered high school graduates. For a detailed discussion, see Heckman and LaFontaine (2010).
3. See, for example, Lamb (2014); Murnane (2013); Janosz et al. (2008) ; Pagani et al. (2008) ; Suh et al. (2007); Astone and McLanahan (1991); and Rumberger (1987).
4. See, for example, Goldin and Katz (2008); Hanushek and Woessmann (2008); Dee (2004); Lochner and Moretti (2004); Milligan et al. (2004); Rumberger (1987); and Levin (1972).
5. Two Canadian studies (Gilmore, 2010 and Bowlby, 2005) have looked at high school dropouts and some labour market outcomes using data on 20- to 24-year-olds. This article adds to the literature by focusing on 25- to 34-year-olds and drawing comparisons with individuals with higher levels of education.
6. See LaRochelle-Côté (2013).
7. Throughout the paper, individuals with a high school diploma include those who have some post-secondary education but did not complete a post-secondary degree.
8. The reasons why students are dropping out of high school are complex, and can be regrouped in three broad categories (Doll et al., 2013): school-related consequences on attendance or discipline ("push" factors), out of school constraints or incentives ("pull" factors), and "falling-out" factors (student disengagement factors not caused by push or pull factors). The reasons for dropping out also vary across population groups, for instance between men and women (Bowlby, 2005). Examining why dropout rates declined over the course of the 1990s would require a detailed analysis of these factors and is beyond the scope of this paper.

9. Individuals who did not finish high school can be further grouped into three categories for 2016: among men, the highest level of education was grade 8 or lower for 19% of them; it was grade 9 or 10 for 41% of them; and for those who were non-graduates, it was grade 11 to 13 for 40% of them. The respective proportions among women were 21%, 39% and 40%. In 1990, their educational attainment was somewhat lower. At the time, the respective proportions of educational attainment for both men and women were the same: 20% had grade 8 or lower; 50% had grade 9 or 10; and 30% of non-graduates had grade 11 to 13.

10. Although the Labour Force Survey is not conducted on reserves, it collects information on First Nations living off reserve, Métis and Inuit.

11. See Bougie et al. (2013) for a detailed analysis of education and employment among Aboriginal people.

12. Immigrants are less likely to have an education level equal to less than a high school diploma, but when it is the case, they are more likely to have the lowest level (grade 8 or lower). On the other hand, among Aboriginal people who did not have a high school diploma, most had a grade 11 to 13 education.

13. See Lefebvre and Merrigan (2008).

14. One reason for women not completing high school, as cited in the literature, is childbirth during adolescence (see Hango and Le Bourdais 2009). Information on the age of the oldest child is not available in the dataset. Based on the available information, women who did not finish high school had children at an earlier age. However, it cannot be determined whether having children was one of the reasons for not completing high school or whether they had children earlier because they were no longer attending school.

15. 33% = (15.1 + 5.1) / (41.4 + 15.1 + 5.1). 11% = (3.1 + 0.6) / (28.6 + 3.1 + 0.6) in the bottom panel of Table 2.

16. For example, in 2011, 22% of individuals aged 25 to 64 with a severe or very severe disability and 19% with a mild or moderate disability did not have a high school diploma compared with 11% of those without a disability (Turcotte, 2014).

17. Among men with less than a high school diploma, the employment rate varied by the highest grade completed. The rates were 63% for those with an education level equal to grade 8 or lower; 67% for those with grade 9 or grade 10; and 68% for those with grade 11 to 13, who were non-graduates.

18. Among those without a high school diploma, the employment rate of men surpassed that of women by 26 percentage points. That difference, however, remained similar when differences between men and women were accounted for in a logistic regression model (including age, Aboriginal and immigrant status, marital status, number of years in school, province of residence, urban/rural region, age of youngest child, and working status of spouse). This suggests that other factors, including labour demand factors, explain the employment rate gap between men and women who did not finish high school.

19. Among women with less than a high school diploma, the employment rate varied by the highest grade completed, similar to the situation for men. The differences, however, were much more pronounced among women. The rates were 28% for those with an education level equal to grade 8 or lower; 39% for those with grade 9 or grade 10; and 51% for those with grade 11 to 13 who were non-graduates.

20. There is more variance over time in the employment rate of the least-educated. Taking men as an example, the variance in the employment rate of those without a high school diploma was 5.7, compared with 5.2, 3.2 and 1.6 for the three higher levels of education.

21. See LaRochelle-Côté and Gilmore (2009).

22. In recent years, however, the employment rate for of men without a high school diploma declined faster in the Prairie provinces. From 2011 to 2016, the rates declined by 12 percentage points in Manitoba, 10 percentage points in Alberta, and 5 percentage points in Saskatchewan.

23. It may be that high school dropouts in the early nineties were likely to be more skilled than high school dropouts today. If so, one of the reasons for the decline in the employment rate among those with no high school diploma could be a decreasing skill set within this group. Data from the 1994 International Adult Literacy Survey (IALS), 2003 International Adult Literacy and Skills Survey (IALSS) and 2012 Programme for the International Assessment of Adult Competencies (PIAAC) were used to look at skill levels. In each of these three surveys, one variable based on prose and document literacy can be used to make comparisons over time. The results show that in 1994, among those with less than a high school diploma, 16% were in the lowest level (Level 0). In 2003, that proportion was 8% and in 2012, it was 13%. The difference was more pronounced looking at the lowest two levels (Level 0 and Level 1). The proportions for 1994, 2003 and 2012

were 36%, 24% and 45%, respectively. Interestingly, the employment rate for this group went up between 1994 and 2003, and went down after that. However, a more rigorous decomposition analysis would be needed to demonstrate a link between employment and skills, which is beyond the scope of this study.

24. Individuals whose highest level of education is less than high school graduation are less likely to be students (see Table 2). As a result, when students are excluded, the employment rate gap between those with less than a high school diploma and those with higher levels of education becomes slightly larger.

25. In 2016, the proportion of individuals whose highest level of education was some post-secondary was 6% among men and 5% among women. Removing individuals with some post-secondary education from the category of high school graduates would increase the employment rate of men by less than 2 percentage points, and would not change the employment rate of women.

26. Data from the three cycles were pooled to increase the sample size. The information on work intensity is for reference years 2012, 2013 and 2014.

27. The deterioration in labour market outcomes of young people with less than a high school diploma mostly took place after 2004 (particularly in the case of women). However, the proportion of those with less than a high school diploma mainly declined during the 1990s, which reduces the possibility that compositional changes are at the root of changes in the labour market participation of the least educated youth.

28. Among men with less than a high school education, one-third of those who were not in the labour force were permanently unable to work. This compared with 12% of non-participant men who had a high school diploma. Fewer non-participant women were permanently unable to work (13% among those with less than a high school diploma, and 5% among those who had a high school diploma).

29. See Marshall (2012).

30. Among men, the proportion of individuals aged 25 to 34 who were students varied from 3% for those with less than a high school diploma to 11% for those with a university degree. Among women, the same proportion varied from 8% to 11%.

31. There are a total of 500 different occupational groupings, but not all educational groups are employed in all occupational groupings. For example, 90% of men with less than a high school diploma were employed in 111 occupations and 90% of their female counterparts were employed in 69 occupations. For a list and description of the 500 occupations, see the National Occupational Classification.

32. The data from the three cycles were pooled to increase the sample size. The pooled data were adjusted for inflation and are expressed in 2014 constant dollars.

33. Women with low educational attainment are more likely to be paid minimum wage. For example, Galarneau and Fecteau (2014) show that, in 2013, about 15% of women aged 25 to 34 with less than a high school diploma were paid minimum wage compared with 5% for their male counterparts.

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